

**IN THE CLAIMS:**

A complete listing of the claims is set forth below. Please amend the claims as follows:

1-38. **(Canceled)**

39. **(New)** A computer-implemented system for providing bulk data transfers between one or more data stores, comprising:

a data integration server coupled with the one or more data stores, the data integration server comprising:

a plurality of programmatic source interfaces coupled with one or more source data stores, wherein the one or more programmatic source interfaces are defined according to a source interface specification and are exposed during a bulk data transfer, one or more data entities are extracted from the one or more source data stores; and

a plurality of programmatic target interfaces coupled with one or more target data stores, wherein the one or more programmatic target interfaces are defined according to a target interface specification and are exposed during the bulk data transfer, one or more of the extracted data entities are loaded into the one or more target data stores.

40. **(New)** The system of Claim 39, wherein the one or more programmatic interfaces comprise JAVA interfaces.

41. **(New)** The system of Claim 39, wherein the plurality of programmatic interfaces are exposed as an industry standard interface supporting bulk data transfers according to an industry standard protocol.

42. **(New)** The system of Claim 41, wherein the data integration server is configured to:

receive a request from a client indicating that the client is extracting data from one or more source data stores and loading data into one or more target data stores in accordance with the industry standard protocol;

create one or more programmatic source interfaces to enable extraction of the data from the one or more source data stores;

create one or more programmatic target interface to enable loading of the data into the one or more target data stores;

for data extraction, as the programmatic source interface produces the data extracted from the one or more source data stores, send the outgoing data to the client in accordance with the industry standard protocol; and

for data loading, as the data arrives from the client in accordance with the industry standard protocol, send the incoming data to the one or more programmatic target interfaces for loading into the one or more target data stores.

43. **(New)** The system of Claim 39, wherein loading data entities comprises inserting, updating, or deleting data entities.

44. **(New)** The system of Claim 39, wherein the data integration server is configured to:

define one or more resources within each of the one or more programmatic interfaces which represent data entities within the one or more data stores; and

in response to a request to execute a bulk data transfer involving one or more resources within the one or more data stores, create each of the one or more programmatic interface within which at least one of the resources is defined.

45. **(New)** The system of Claim 44, wherein each of the one or more programmatic interfaces persists, once created:

if a programmatic source interface, for the entirety of the bulk data transfer before being released; and

if a programmatic target interface, for a single step of the bulk data transfer before being released.

46. **(New)** The system of Claim 44, further comprising one or more session interfaces and wherein:

one or more programmatic interfaces are defined within each session interface;

each session interface isolates from its one or more defined programmatic interfaces details associated with export and import of resources involved in a bulk data transfer; and

the system is further operable to, in connection with creating the programmatic interfaces, create each session interface within which at least one of the programmatic interfaces is defined.

47. **(New)** The system of Claim 46, wherein a session interface persists, once created, either for the entirety of the bulk data transfer or for the entirety of multiple data transfers according to its definition.

48. **(New)** The system of Claim 39, wherein the data integration server is configured to:

allow each of the one or more programmatic interfaces to produce or consume data entities in a desired format;

convert data entities produced in a first format to a programmatic source interface to a second format to a programmatic target interface only if necessary because the first and second formats are different.

49. **(New)** The system of Claim 39, wherein the data integration server further comprises one or more relational interfaces as alternatives to one or more programmatic interfaces, each relational interface coupled with a corresponding relational data store and exposed within the data integration server during a bulk data transfer to enable the data integration server to read data entities directly from and write data entities directly to the one or more relational data stores during the bulk data transfer without using the one or more programmatic interfaces.

50. **(New)** The system of Claim 49, wherein each of the one or more relational interface comprises:

an interface schema file providing a database-neutral description of a physical database schema of the one or more relational data stores; and

an interface mapping file providing a logical-to-physical mapping for all data entities defined for the one or more relational interfaces to enable the data integration server to execute bulk data transfers between one or more relational data stores having different physical database schema.

51. **(New)** A computer-implemented method for executing a bulk data transfer between persistent data stores, comprising:

providing, by a server, a plurality of programmatic source interfaces coupled with one or more source data stores, wherein the one or more programmatic source interfaces are defined according to a source interface specification, wherein the plurality of programmatic source interfaces are defined according to a common programmatic source interface specification and are exposed during a bulk data transfer;

extracting, by the server, one or more data entities from the one or more source data stores for loading into one or more selected target data stores; and

providing, by the server, one or more programmatic target interfaces coupled with one or more target data stores, wherein the one or more programmatic target interfaces are defined according to a target interface specification, wherein the plurality of programmatic target interfaces are defined according to a common programmatic target interface specification and are exposed during the bulk data transfer;

loading, by the server, one or more data entities into the one or more target data stores from the one or more source data stores.

52. **(New)** The method of Claim 51, wherein the one or more programmatic interfaces comprise JAVA interfaces.

53. **(New)** The method of Claim 51, wherein the plurality of programmatic interfaces are exposed as an industry standard interface supporting bulk data transfers according to an industry standard protocol.

54. **(New)** The method of Claim 53, further comprising:

receiving a request from a client indicating that the client is extracting data from one or more source data stores and loading data into one or more target data stores in accordance with the industry standard protocol;

creating one or more programmatic source interfaces to enable extraction of the data from the one or more source data stores;

creating one or more programmatic target interface to enable loading of the data into the one or more target data stores;

for data extraction, as the programmatic source interface produces the data extracted from the one or more source data stores, sending the outgoing data to the client in accordance with the industry standard protocol; and

for data loading, as the data arrives from the client in accordance with the industry standard protocol, sending the incoming data to the one or more programmatic target interfaces for loading into the one or more target data stores.

55. **(New)** The method of Claim 51, wherein loading data entities comprises inserting, updating, or deleting data entities.

56. **(New)** The method of Claim 51, further comprising:

defining one or more resources within each of the one or more programmatic interfaces which represent data entities within the one or more data stores; and

in response to a request to execute a bulk data transfer involving one or more resources within the one or more data stores, creating each of the one or more programmatic interface within which at least one of the resources is defined.

57. **(New)** The method of Claim 56, wherein each of the one or more programmatic interfaces persists, once created:

if a programmatic source interface, for the entirety of the bulk data transfer before being released; and

if a programmatic target interface, for a single step of the bulk data transfer before being released.

58. **(New)** The method of Claim 56, further comprising providing one or more session interfaces, wherein:

one or more programmatic interfaces are defined within each session interface;

each session interface isolates from its one or more defined programmatic interfaces details associated with export and import of resources involved in a bulk data transfer; and

in connection with creating the programmatic interfaces, each session interface is created within which at least one of the programmatic interfaces is defined.

59. **(New)** The method of Claim 58, wherein a session interface persists, once created, either for the entirety of the bulk data transfer or for the entirety of multiple data transfers according to its definition.

60. **(New)** The method of Claim 51, further comprising:

allowing each of the one or more programmatic interfaces to produce or consume data entities in a desired format;

converting data entities produced in a first format to a programmatic source interface to a second format to a programmatic target interface only if necessary because the first and second formats are different.

61. **(New)** The method of Claim 51, further comprising providing one or more relational interfaces as alternatives to one or more programmatic interfaces, each relational interface coupled with a corresponding relational data store and exposed within the data integration server during a bulk data transfer to enable the data integration server to read data entities directly from and write data entities directly to the one or more relational data stores during the bulk data transfer without using the one or more programmatic interfaces.

62. **(New)** The method of Claim 61, wherein each of the one or more relational interface comprises:

an interface schema file providing a database-neutral description of a physical database schema of the one or more relational data stores; and

an interface mapping file providing a logical-to-physical mapping for all data entities defined for the one or more relational interfaces to enable the data integration server to execute bulk data transfers between one or more relational data stores having different physical database schema.



63. **(New)** Software for executing a bulk data transfer between persistent data stores, the software being embodied in computer-readable media and when executed configured to:

provide a plurality of programmatic source interfaces coupled with one or more source data stores, wherein the one or more programmatic source interfaces are defined according to a source interface specification, wherein the plurality of programmatic source interfaces are defined according to a common programmatic source interface specification and are exposed during a bulk data transfer;

extract one or more data entities from the one or more source data stores for loading into one or more selected target data stores; and

provide one or more programmatic target interfaces coupled with one or more target data stores, wherein the one or more programmatic target interfaces are defined according to a target interface specification, wherein the plurality of programmatic target interfaces are defined according to a common programmatic target interface specification and are exposed during the bulk data transfer;

load one or more data entities into the one or more target data stores from the one or more source data stores.

64. **(New)** The software of Claim 63, wherein the one or more programmatic interfaces comprise JAVA interfaces.

65. **(New)** The software of Claim 63, wherein the plurality of programmatic interfaces are exposed as an industry standard interface supporting bulk data transfers according to an industry standard protocol.

66. **(New)** The software of Claim 65, wherein the data integration server is configured to:

receive a request from a client indicating that the client is extracting data from one or more source data stores and loading data into one or more target data stores in accordance with the industry standard protocol;

create one or more programmatic source interfaces to enable extraction of the data from the one or more source data stores;

create one or more programmatic target interface to enable loading of the data into the one or more target data stores;

for data extraction, as the programmatic source interface produces the data extracted from the one or more source data stores, send the outgoing data to the client in accordance with the industry standard protocol; and

for data loading, as the data arrives from the client in accordance with the industry standard protocol, send the incoming data to the one or more programmatic target interfaces for loading into the one or more target data stores.

67. **(New)** The software of Claim 63, wherein loading data entities comprises inserting, updating, or deleting data entities.

68. **(New)** The software of Claim 63, further configured to:

define one or more resources within each of the one or more programmatic interfaces which represent data entities within the one or more data stores; and

in response to a request to execute a bulk data transfer involving one or more resources within the one or more data stores, create each of the one or more programmatic interface within which at least one of the resources is defined.

69. **(New)** The software of Claim 68, wherein each of the one or more programmatic interfaces persists, once created:

if a programmatic source interface, for the entirety of the bulk data transfer before being released; and

if a programmatic target interface, for a single step of the bulk data transfer before being released.

70. **(New)** The software of Claim 68, further configured to provide one or more session interfaces, wherein:

one or more programmatic interfaces are defined within each session interface;

each session interface isolates from its one or more defined programmatic interfaces details associated with export and import of resources involved in a bulk data transfer; and

the system is further operable to, in connection with creating the programmatic interfaces, create each session interface within which at least one of the programmatic interfaces is defined.

71. **(New)** The software of Claim 70, wherein a session interface persists, once created, either for the entirety of the bulk data transfer or for the entirety of multiple data transfers according to its definition.

72.     **(New)** The software of Claim 63, further configured to:

allow each of the one or more programmatic interfaces to produce or consume data entities in a desired format;

convert data entities produced in a first format to a programmatic source interface to a second format to a programmatic target interface only if necessary because the first and second formats are different.

73.     **(New)** The software of Claim 63, further configured to provide one or more relational interfaces as alternatives to one or more programmatic interfaces, each relational interface coupled with a corresponding relational data store and exposed within the data integration server during a bulk data transfer to enable the data integration server to read data entities directly from and write data entities directly to the one or more relational data stores during the bulk data transfer without using the one or more programmatic interfaces.

74.     **(New)** The software of Claim 73, wherein each relational interface comprises:

an interface schema file providing a database-neutral description of a physical database schema of the one or more relational data stores; and

an interface mapping file providing a logical-to-physical mapping for all data entities defined for the one or more relational interfaces to enable the data integration server to execute bulk data transfers between one or more relational data stores having different physical database schema.